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Cebu.

Bills of health issued—	
To foreign ports	0
To domestic ports	301
Number of vessels inspected—	
From foreign ports	8
From domestic ports	167
Number of passengers inspected—	
Cabin	108
Steerage	1,154
Total number of crew inspected	3,465

Respectfully,

J. C. PERRY,

Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

*U. S. Marine-Hospital Service.**Plague in Manila September 9 to 15.*MANILA, P. I., *September 20, 1900.*

SIR: I have the honor to report that during the week ended September 15, 1900, there occurred only 1 case of plague in Manila, the victim being a Chinese. Total number of deaths from all causes during the same time, 256.

Respectfully,

J. C. PERRY,

Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

U. S. Marine-Hospital Service.

PORTO RICO.

*Report on the high mortality on the island.*PONCE, P. R., *October 12, 1900.*

SIR: I have the honor to make the following report upon the causes of the abnormally high death rate in the municipality of Ponce, P. R., during the past year.

In getting data for this report, I have been assisted in all possible ways by the authorities and the physicians of Ponce, and in the Hospital Tricoche and the Hospital Civil, I have had access to all cases through the kindness of the doctors in charge. The accompanying table was taken from the reports made to the municipal judge. The reports are so inaccurate in diagnosis that complete definite mortality statistics can not be compiled from them, but the table is sufficient for my purposes.

The municipality of Ponce includes the city proper, the playa, and the outlying districts, called "barrios," extending several hours ride from the city. Its total population as shown in the United States census is 33,477, of whom about half live in and close around the city and suburbs. About 40 per cent of the deaths occur in the outside districts, and these cases are seldom seen by a physician. The remaining 60 per cent do not properly represent the city's proportion, as large numbers, which it is impossible to estimate, come in on their last legs and die in the city. They come not only from this municipality, but from every nook and corner of the island. Ponce has the unfortunate name of being charitable on account of her several hospitals and charity organizations. It was the first on the island to do private sys-

tematic work along this line, and has become the mecca of the sick and the destitute.

Predisposing causes.—The class of people among whom this high mortality exists are the lower classes. The better classes have not furnished more than their normal quota, and these from the usual causes. These lower classes are a mixture of Spanish, Indian, and negro blood, the latter predominant. Many are pure negroes. Generations of an underfed, unsanitary, and immoral life have produced a race short statured, flat chested, and physically weak, as a general rule. Like children, they have never been accustomed to think or do for themselves and have little stamina, becoming, in the face of disease or misfortune, passive and apathetic.

A very important predisposing cause is the *ankylostomum duodenale*, with which they are largely infected. Not having the facilities, I could not search for microscopic evidence of this. However, this phase of the subject as well as the blood examinations, have been dealt with by Lieut. B. K. Ashford, assistant surgeon, U. S. A., New York Medical Journal, April 14, 1900. He found the ova in 19 of 20 selected cases of this pernicious anæmia.

The sanitary condition, generally speaking, is bad, though much improved during the past two years. In the first place, the city is badly located at the foot of the mountains, on a very flat plain, and the drainage, all surface, is so imperfect that after every hard rain ponds of water form under many houses, remaining some days.

The Portuguese River passes around the eastern and southern sides of the city. Usually nearly dry, in the rainy season it sometimes overflows, doing great damage to life and property and leaving deposits of mud and filth in those parts. From this river, about two miles distant, the water is taken for the city. No attempt is made at filtration and the small reservoir is not large enough to allow the water to settle before it passes on into the mains. After rains the city water becomes muddy simultaneously with that of the river, and it frequently has a bad odor when drawn. From this water system, or from the river itself, the people get their water for all purposes. In the better houses the water is filtered or boiled, or both, but in the others they know nothing and care nothing about such necessity. There are only one or two small sewers which carry the sewerage from the hospitals, jail, and a very few private houses. Instead of sewer connections the houses have open cesspools in the small back yards, or in the house itself, where it is always situated adjacent to the kitchen. These cesspools hold immense quantities and are rarely cleaned, their odor penetrating, many times, into the living rooms and the streets. Recently built houses have flush closets and covered cesspools. The "shacks" of the poorer people usually have no closet of any kind.

The subsoil is loose porous gravel, full of water and, of course, thoroughly contaminated. Fortunately there are no wells.

The streets are macadam, dusty or muddy as the case may be. A more or less efficient street and garbage department is operated by the local board of health.

To sum up the chief predisposing causes, we have a class of people of no great endurance, badly infected with ankylostoma, living in unhygienic surroundings, always on the verge of sickness, so that it needed but a final straw.

Immediate causes.—It is not the province of this report to discuss the hurricane disaster, business stagnation, relief measures, or other causes, why they were in such circumstances, suffice to say that many thousands

during the past year have been living on a very meager diet and many have starved outright. Bananas and plantains, two of their great food staples, were almost entirely destroyed by the hurricane. They ate whatever could be got. Sugar cane, mangoes, and other fruit (often unripe), rice, beans, codfish, and various native tubers, all cooked together in strong grease until it would need the stomach of the proverbial goat to properly digest it. Much of the codfish, generally of the poorest quality, is eaten raw. A poor quality of rum is drunk in large quantities, though drunkenness is rare.

This insufficiency of food was the final straw.

In the table, I have included all the diseases which occur here, and which would be suspected of being the cause of such a death rate, but only three headings show any notable increase, viz, diseases of the digestive apparatus, anæmia and malnutrition, and dysentery. It will be noticed that since July, 1899, the rate has been above normal, taking that month as normal, though it is higher than it should be. The increase began with a jump in August 1899, due to 194 victims of the flood of the 8th of that month. In September, 60 more were found and reported. The number was held up during the months following by the immediate distress of that time, but gradually fell until February, 1900, when it nearly reached the July, 1899, number. By this time, however, the weaker population began to break down under the life of semistarvation, and the death rate began an upward stride, reaching 681 in August, 1900; September shows a decrease of 217, possibly influenced by a diminution of material as well as an improvement in the condition.

I have made a rough classification of the cases according to the most prominent feature, but close lines can not be drawn as the several causes are operating more or less in the same case. Sex seems to have no influence.

(1) *Diseases of the digestive system* are chiefly some form of enteritis, viz:

(a) Irritative diarrheas resulting from eating of indigestible and decomposing food. During July, 1900, there were distributed by the city authorities, rations of codfish actually putrid and stinking. It was finally condemned and destroyed by the superior board of health. I have seen many cases of intense diarrhea from eating mangoes of which these people are inordinately fond. These cases present no special symptoms, but once well started are difficult to check, more especially as the irritant is continued, and many cases have no medical attention. In a short time they pass into a chronic, exhaustive, or ulcerative condition with a fatal result sooner or later.

(b) Secondary diarrheas are common, supervening upon cases of long-standing anæmia or starvation as the weakness and oedema becomes marked. It seems to be a manifestation of the general weakness, and presents few acute inflammatory symptoms. It often terminates these cases of anæmia, etc.

Malarial diarrheas is very common in the lower coast districts, the children being more affected than the adults. I know many will doubt its malarial origin, but it is well recognized by the physicians here. The following case, which was under my personal care, illustrates this form very well:

A. D., male, aged 2 years. Was sick for ten days or two weeks before I saw the case and history was rather difficult to get. No chills, slight rise of temperature every evening (about 1° C.), slight perspiration, coated tongue, no appetite, thirst, some vomiting at first, abdomen soft with some tenderness, no enlargement of spleen could be deter-

mined, apathetic, but irritable when aroused. Took his medicine well. Had three to ten passages in the twenty-four hours. Treatment for three days consisted of salol, bismuth, and tr. opii camph. in large doses, with feeding on egg albumen, boiled milk with limewater. Little effect was obtained, the child becoming semicomatose and took medicine badly. Believing it to be malaria, I gave quinine hydrochl., .30 hypodermatically morning and evening. I was surprised at the marked improvement from the first and after three days quinine was given by the mouth. Rapid recovery followed.

(c) Ulcerative diarrheas are many times the final stages of any of the preceding. Characterized by painful abdomen, frequent and exhausting evacuations, often containing more or less blood. These are the cases usually returned under dysentery.

(2) *Anæmia*.—Probably the most prominent are the cases of anæmia, many of whom have no diarrhea, or none until the last. Naturally, the first cause suspected is (a) malaria, and anæmia from that cause is often seen, especially in the lowlands, but it can not be the cause of any great proportion of the whole, as the malaria is most prevalent along the coast and this pernicious anæmia occurs in greater number and degree in the high interior. I saw many cases in the hospitals, but very few had the icteric tint of the conjunctiva, enlarged spleen, or gave a malarial history.

A wide difference of opinion exists as to the relative part played by (b) the ankylostomum and (c) simple starvation. Both occur so often in the same patient and the microscope is used so little to find the ova that it is impossible to differentiate them, as they present practically the same clinical symptoms, remarkable for their variety in the different cases. They appear dull and apathetic, of an ashy or pasty yellow color, with an entire absence of color from the mucous membranes, nails, etc. Both constipation and diarrhea occur, sometimes alternating. Anæmic heart murmurs are very constantly found and differ greatly. Nearly every case presents more or less œdema of legs, face, and scrotum, and dropsies are common and extensive, so much so that some physicians have suggested to me that some cases may have been œdemic beriberi, but I have seen nothing but what could be more rationally explained by other causes. While I know that this island lies within the geographical limits of beriberi, still few cases occur in the West Indies. Manson speaks of one from Hayti, but so far as I have been able to find out there has never been a case in Porto Rico. If these are beriberi, they are very atypical.

A generous diet, particularly if combined with constructives, effects a rapid and complete cure in many instances. These are evidently cases of simple starvation. It is often seen, however, that many cases, after a prolonged fast, develop a stubborn diarrhea when put upon good food. Many cases resist treatment even when diet and digestive powers are good. This may be a diagnostic point looking toward the ankylostomum. These cases usually die from sheer exhaustion of their vital powers until heart asthenia closes the scene.

(d) Inanition is a common cause of the high percentage of death among infants. Attention is called to the number dying under 1 year.

(3) *Dysentery*.—Of this little need be said. Nearly all these cases are ulcerative diarrhea, passing blood. While there may be some sporadic cases, as often occur in this climate, I do not think many occur here. I have not seen any, and the physicians tell me they rarely see true dysentery.

An interesting feature of the table is the number of cases of tetanus

shown, especially of infantile tetanus. A fairly steady presence of the disease is shown. The infantile cases are almost always due to bad dressing of the cord by the midwives who deliver the vast majority of the pregnancies. A favorite dressing is copaiba oil.

While this report lacks microscopical and exhaustive description, I think it will show why Ponce is having an epidemic death rate without the epidemic. I think the future will show a constant decrease of the number.

Respectfully,

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

W. W. KING,
Assistant Surgeon, U. S. M. H. S.

[Inclosure.]

	1899—						1900—								
	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.
Under 1 year	42	33	48	72	77	63	41	29	41	55	117	94	104	101	52
Under 2 years	21	18	12	24	21	24	10	7	15	21	33	43	27	35	34
Under 3 years	13	6	11	15	10	11	10	8	9	8	19	18	29	25	12
Under 4 years	3	5	2	8	1	6	12	5	6	4	11	22	22	26	16
Under 5 years	5	a 3	a 4	3	14	3	.....	2	9	7	10	33	34	45	34
Disease of nervous system.....	9	5	16	10	10	12	20	9	14	20	10	16	7	11	7
Disease of circulatory system.....	3	6	8	10	8	8	7	6	7	6	5	10	4	7	8
Disease of respiratory system.....	6	8	11	16	11	19	16	6	19	27	27	11	13	13	14
Disease of digestive system.....	71	52	66	100	128	131	91	78	77	120	215	233	279	294	209
Anæmia and malnutrition.....	22	25	20	45	45	56	31	49	48	60	81	101	159	172	169
Tuberculosis.....	23	25	25	34	24	25	28	18	31	23	21	18	14	23	14
Typhoid fever.....	4	.....	.....	.....	2	1	1	1	3	.....	2	.....	1	.....	.....
Smallpox.....	3	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dysentery.....	7	4	3	2	22	13	4	2	2	8	34	51	41	9	.....
Grippe.....	1	.....	.....	.....	.....	.....	2	2	.....	18	2	.....	.....	.....	.....
Malaria.....	.....	.....	.....	.....	2	3	2	1	.....	5	6	6	40	26	4
Tetanus, traumatic.....	1	.....	3	.....	2	1	.....	3	1	.....	.....	.....	.....	.....	1
Tetanus, infantile.....	2	5	5	6	7	1	1	2	5	2	4	4	3	5	5
Others.....	21	b 22	c 94	55	25	33	22	20	39	42	36	32	26	121	38
Total.....	173	354	241	278	287	303	225	197	246	331	443	482	587	681	464

a Drowned not included. b 194 drowned. c 60 drowned.

Reports from Ponce.

PONCE, P. R., October 15, 1900.

SIR : I have the honor to transmit herewith the quarantine and abstract bills of health reports for the week ended October 13, 1900 :

Nothing of interest has occurred at this station. I sent to all persons concerned, copies of Assistant Surgeon Lavinder, quoting the paragraph relating to what vessels are to be inspected, as the same procedure will be followed here as at San Juan as near as possible.

The sanitary condition remains about the same, no quarantinable disease is present in this vicinity.

Respectfully,

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

W. W. KING,
Assistant Surgeon, U. S. M. H. S.